



Evaluation of the Decentralized Gateway Vehicle Inspection Program for 2007



Missouri Department of Natural Resources
Division of Environmental Quality
Air Pollution Control Program

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For more copies of this report, contact the Missouri Air Pollution Control Program at
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Introduction

The vehicle emissions inspection and maintenance (I/M) program is a federally required air pollution control strategy in the St. Louis ozone nonattainment area, made up of the counties of Franklin, Jefferson, St. Charles, and St. Louis, and the City of St. Louis. The I/M program is designed to reduce ground-level ozone-forming emissions from passenger vehicles and trucks by accurately identifying the vehicles that have emissions problems and requiring their repair prior to registration renewal. Ground-level ozone is a strong oxidizing chemical that when breathed affects the lung function of everyone, especially the young, the elderly and those with respiratory illnesses such as asthma, emphysema, and bronchitis.

Pursuant to Chapter 643.353, RSMo, the Department of Natural Resources is issuing an annual report on the status of the implementation and the effectiveness of the decentralized vehicle emissions inspection and maintenance program. The following tasks have been completed as of January 15, 2008:

Gateway Vehicle Inspection Program Contract

The decentralized I/M program is called the Gateway Vehicle Inspection Program (GVIP). On December 14, 2006, the Office of Administration's Division of Purchasing and Materials Management released the Request for Proposal (RFP) for the Gateway Vehicle Inspection Program. This RFP described the emissions and safety inspection program equipment (hardware and software) and program management services that the department and the Missouri State Highway Patrol sought.

Five bids were received on February 15, 2007. Best and final offers were received on April 3, 2007. The contract was awarded to SysTech International on May 29, 2007 and lasts until September 1, 2011, with the option of one two-year extension until September 1, 2013 and one one-year extension until September 1, 2014.

SysTech International invited all current safety inspection stations to attend one of three GVIP seminars on June 13 and 14 at St. Louis Community College at Forest Park and on June 21 at the Holiday Inn St. Louis-Southwest Viking hotel. All three seminars were filled to capacity. Stations were invited to participate in the GVIP and order their inspection equipment by the first deadline of June 29, 2007. Stations that ordered their equipment from SysTech International by June 29 were given priority for equipment delivery and installation by the October 1 GVIP start date. Stations that ordered between June 29 and September 1 had equipment scheduled for delivery and installation by November 1. Stations that ordered after September 1 had equipment scheduled for delivery and installation after November 1. As of January 15, 774 equipment orders have been filled.

As of January 1, 2008, SysTech, through a contract with Ranken Technical College, trained over 3,700 inspector/mechanics. Training classes were offered from September through December 2007, and will continue to be offered once a month at Ranken Technical College in St. Louis city. The next training class is scheduled for Wednesday, February 27, 2008 at 5:00 PM.

Licensed Emissions Inspection Stations

As of January 15, 2008, the Missouri State Highway Patrol had licensed 703 public GVIP inspection stations and ten private or government GVIP inspection stations. Each of these stations has at least one inspection unit from SysTech International that is able to send real time inspection information directly to the Department of Revenue and local license offices through an internet connection. Each GVIP station also has one official metal sign to designate the station as an official emissions inspection station and one poster that informs the public that required repairs need not be made at that inspection station as required by 643.320.6, RSMo.

These GVIP stations are well distributed throughout the St. Louis ozone nonattainment area so that no more than 20 percent of the population is more than five miles from a licensed GVIP station, a requirement of 643.303.12, RSMo. A map of the currently licensed station locations is attached at the end of this document. The department expects that the number of small businesses who will be licensed to perform emissions inspections will increase slightly throughout 2008 as more small businesses seek to participate in the GVIP by offering both safety inspections and emissions testing. The estimated maximum number of licensed emissions inspection stations would be 1,100, the same as the current number of licensed safety inspection stations in the St. Louis ozone nonattainment area.

For a current list of licensed inspection stations, sorted by city or by zip code, please visit our web site: <http://www.dnr.mo.gov/gatewayvip/repair/index.html>.

Decentralized Emissions I/M Rule

To meet the rulemaking deadline established by 643.303.11, RSMo, the Missouri Air Conservation Commission (MACC) held a formal public hearing on March 29, 2007, that gave Greater St. Louis Area motorists and the vehicle repair industry the opportunity to comment on the department's proposed decentralized I/M rule, 10 CSR 10-5.381 On-Board Diagnostics Motor Vehicle Emissions Inspections. Eleven comments were received from the Department of Public Safety's Missouri State Highway Patrol and the United States Environmental Protection Agency. No comments were received from the public or the vehicle repair industry. The MACC adopted the final rule on April 26, 2007. The rule became effective on August 30, 2007.

Vehicle Emissions I/M State Implementation Plan

To comply with the requirements established by 643.303.8, RSMo, the MACC held a formal public hearing on October 25, 2007 to give the public the opportunity to comment on the department's proposed amendment to the I/M portion of the State Implementation Plan. Seven comments were received from the United States Environmental Protection Agency, and one comment was received from the MACC. No comments were received from the public. The MACC adopted the final SIP amendment on December 6, 2007. The I/M SIP amendment was submitted to the EPA on December 7, 2007. The EPA is reviewing the SIP submittal, and will be filing its findings in the Federal Register later this year.

Interagency Agreement

To comply with 643.303.10 and 643.337, RSMo, the department's Division of Environmental Quality (DEQ) and the Department of Public Safety's Missouri State Highway Patrol (MSHP) entered into an interagency agreement on July 3, 2007. The DEQ is the lead agency with respect to motor vehicle emissions inspections, and the MSHP is the lead agency with respect to motor vehicle safety inspections. This interagency agreement defines the responsibilities and coordinates the activities of both agencies for the shared oversight of the GVIP.

GVIP Inspection Data

The Gateway Vehicle Inspection Program began vehicle inspections on October 1, 2007 with approximately 100 licensed inspection stations. Because there were no emissions inspection stations available during the month of September, vehicle owners with September plates were given an extension until November 1 and vehicle owners with October plates were given until December 1 to complete their emissions inspections. The MSHP added inspection stations throughout the months of October, November and December as soon as the stations had their inspection equipment installed and initialized and their inspector/mechanics passed the exam.

Through January 15, 2008, 193,370 emissions inspections and 198,163 safety inspections have been conducted at GVIP stations. The department has issued 472 mileage exemptions and 92 cost based waivers.

GVIP Effectiveness

The Gateway Vehicle Inspection Program is accomplishing its primary goal of increasing the convenience of emissions inspections for St. Louis area motorists. By combining safety and emissions inspections at over 700 licensed inspection stations, motorists have the flexibility of choosing an inspection station that they trust and that is located within a short driving distance from either their residence or employer. The GVIP station network consists primarily of test-and-repair local businesses, although there are nine high volume test-only inspection stations, so motorists have a choice of the type of inspection station they want to visit.

The GVIP is designed to reduce ground-level ozone-forming pollution from 1996 and newer light-duty gasoline and 1997 and newer light-duty diesel powered vehicles that are equipped with on-board diagnostics (OBD) systems. By accurately identifying vehicles that have the "Check Engine" light on, or that have unset readiness monitors or problems with the emissions control computer itself, and by requiring vehicle repairs prior to registration renewal, the GVIP is reducing and preventing pollution from vehicles in the St. Louis ozone nonattainment area.

Chapter 643.353, RSMo requires the department to analyze the air quality benefit of the GVIP using the Environmental Protection Agency's MOBILE model, and compare the air quality benefit of the GVIP design to the design of the previous centralized emissions I/M program, known as the Gateway Clean Air Program (GCAP). Attachment 2 of this report contains a graph that compares the MOBILE model results of the GVIP and GCAP. The table below contains the calculated MOBILE model results.

MOBILE 6.2 Light Duty Vehicle Composite Emissions Factors

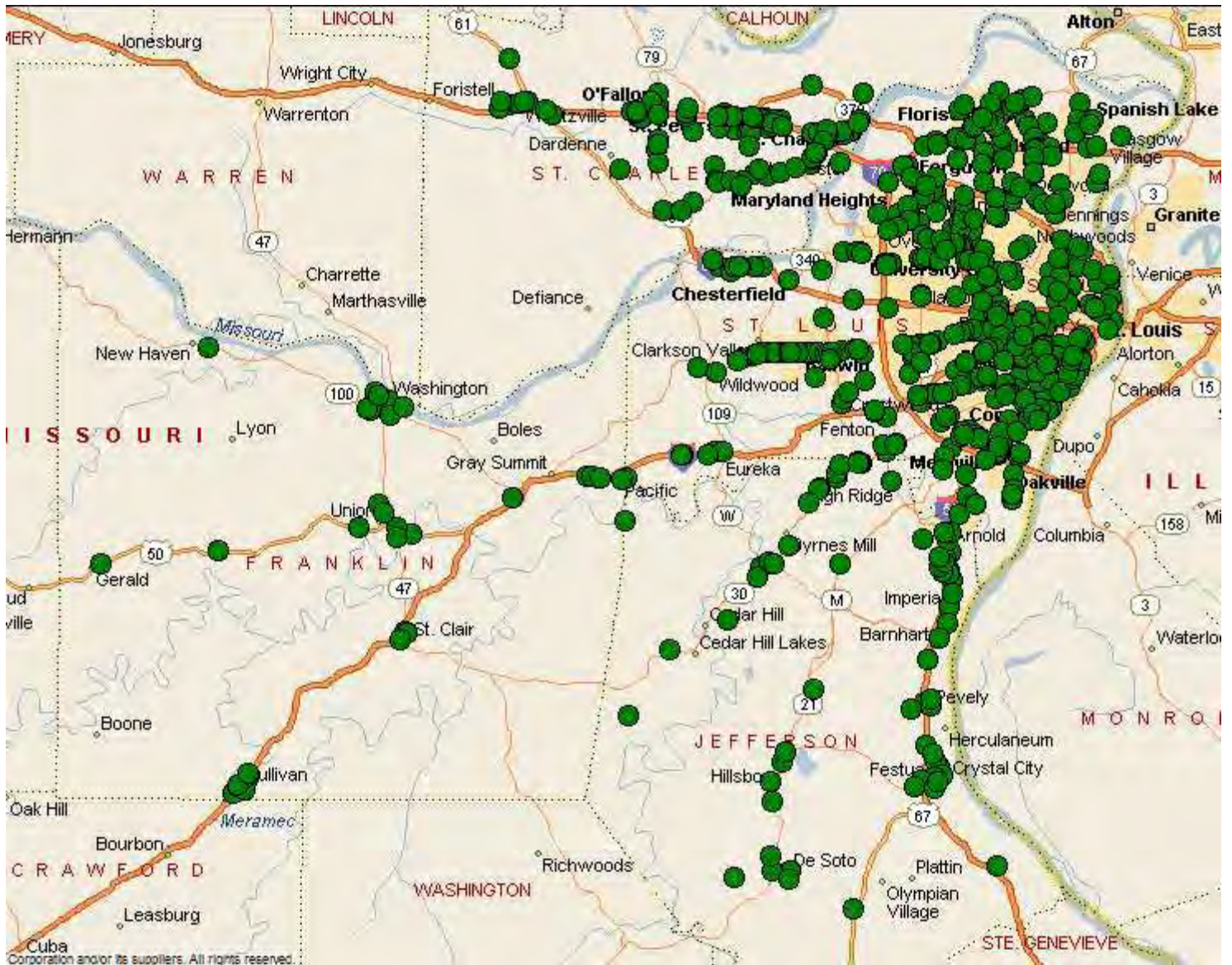
Calendar Year	Ozone-Forming Pollutant	Gateway Clean Air Program	Gateway Vehicle Inspection Program
2008	VOC	0.8780 gpm	0.9075 gpm
2008	NO _x	0.8488 gpm	0.8492 gpm

Summarizing the modeling results, the GVIP average fleet-wide emissions from all light-duty vehicles in the St. Louis ozone nonattainment area are slightly higher when compared with the GCAP average fleet-wide emissions. The GVIP average volatile organic compound (VOC) emissions rate is 0.9075 grams per mile, while the GCAP average VOC emissions rate would have been 0.8780 grams per mile if the GCAP had been continued. The GVIP average oxides of nitrogen (NO_x) emissions rate is 0.8492 grams per mile, while the average NO_x emissions rate would have been 0.8488 grams per mile if the GCAP had been continued.

The GVIP average VOC emissions rate is only 3.36 percent higher than the GCAP average VOC emissions rate. The GVIP average NO_x emissions rate is 0.05 percent higher than the GCAP average NO_x emissions rate. The primary reason that the GVIP is not achieving the same level of ozone-forming pollution reduction as the GCAP is that the GVIP is not designed to reduce VOC and NO_x pollution from 1995 and older model year vehicles, while the GCAP was designed to reduce VOC and NO_x pollution from 1995 and older model year vehicles.

Because 1995 and older model year vehicles are not equipped with OBD systems, and because these vehicles make up a smaller percentage of the number of vehicles being driven in the St. Louis ozone nonattainment area with each passing year, the public cost of requiring emissions tailpipe tests for 1995 and older model year vehicles outweighs the air quality benefits.

Attachment 1 - Map of Currently Licensed GVIP Stations



Attachment 2

**MOBILE 6.2 Comparison of July 2008
Light-Duty Vehicle Composite Emissions Factors**

